

Appl. No. : 10/764,013
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AMENDMENTS TO THE CLAIMS

Please amend the claims as indicated below:

1. (Currently Amended) A system for providing shape, surface features, or both, to a moldable material, comprising:

at least two first opposed flat endless upper and lower belts spaced apart a first distance, each having an inner surface and an outer surface, wherein the outer surface of each of the upper and lower belt is supported by a rigid supporting surface;

at least two second opposed flat endless belts disposed substantially orthogonal to the first two opposed endless belts and spaced apart a second distance, each having an inner surface and an outer surface;

a mold cavity defined at least in part by the inner surfaces of the at least two first and second opposed flat endless belts; and

a drive mechanism for imparting motion to at least two of the opposed flat endless belts.

2. (Currently Amended) The system of claim 1, further comprising -at least two endless opposing profile mold belts, each adapted to fit within the mold ~~belt~~-cavity, and each having

an inner surface adapted to shape, or mold surface features, or both, into a moldable material, and

an outer surface in contact with the inner surfaces of the first or second opposed flat endless belts.

3. Canceled.

4. (Currently Amended) The system of claim 1 ~~3~~, wherein the rigid supporting surface comprises a slider bed or platen.

5. (Currently Amended) The system of claim 1 ~~3~~, wherein the outer surface comprises a coating of a friction reducing substance.

6. (Currently Amended) The system of claim 5, wherein the friction reducing substance comprises a fluoropolymer, or ultra-high molecular weight polyethylene, ~~or other low friction polymer.~~

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7. (Currently Amended) The system of claim 1 ~~3~~, further comprising an air-film lubrication system adapted to reduce friction between the at least two first or second opposed flat endless belt belts and the rigid supporting surface.

8. (Currently Amended) The system of claim 1 ~~7~~, wherein the rigid supporting surface comprises a plurality of holes therein, in fluid communication with a plenum chamber located behind a near-the-slider bed or platen, and wherein the holes and plenum chamber are adapted to provide pressurized air film lubrication between at least one flat endless belt of the at least two first or second opposed flat endless belts and the rigid supporting surface.

9. (Original) The system of claim 1, wherein the first opposed endless belts or the second opposed endless belts, or both, are adjustable such that the first distance, or the second distance, or both, can be varied.

10. (Currently Amended) The system of claim 2 ~~4~~, wherein at least one of the profile mold belts comprises an elastomeric face layer adapted to contact the moldable material, and a reinforced backing layer adapted to contact the inner surface of a belt of the at least two first or second opposed flat endless belts.

11. (Currently Amended) The system of claim 2 ~~4~~, further comprising a plurality of a profile mold belt tensioners, adapted to maintain the profile mold belts in tension.

12. (Currently Amended) The system of claim 11, wherein at least one of the profile mold belt tensioners ~~tensioner~~ comprises one or more pulleys disposed such that the profile mold belt encloses at least a portion of the drive mechanism.

13. (Currently Amended) The system of claim 2, wherein the at least two first opposed flat endless belts and the profile mold belts are oriented substantially horizontally, and wherein the at least two second additional ~~additional~~ opposed flat endless belts disposed substantially orthogonal to the at least two first ~~two~~ opposed endless belts are disposed substantially vertically.

14. (Currently Amended) A method of continuously forming a moldable material to have a desired shape or surface feature or both, comprising:

introducing the moldable material into an end of a mold cavity formed at least in part by the inner surfaces of two substantially orthogonal sets of opposed flat belts which are supported by rigid supporting surfaces;

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exerting pressure by the rigid supporting surfaces on the moldable material through the opposed flat belts;

transferring the moldable material along the mold cavity by driving the opposed flat belts by a drive mechanism to impart longitudinal movement of the belts;

after sufficient time for the material to cure or harden into the molded configuration and thereby form molded material, removing the molded material from the mold cavity.

15. (Original) The method of claim 14, wherein the mold cavity is at least partly defined by the inner surfaces of two opposed profiled mold belts disposed inside the opposed flat belts, and having outer surfaces in contact with the inner surfaces of two of the opposed flat belts.

16. (Original) The method of claim 14, wherein the moldable material comprises a filled thermoset plastic.

17. (Original) The method of claim 14, wherein the moldable material comprises a foamed or foaming material.

18. (Original) The method of claim 15, wherein the profile mold belts form the moldable material into a shape having a cross-section at least approximately corresponding to that of the mold cavity.

19. (Original) The method of claim 15, wherein the profile mold belts impart a surface pattern to the moldable material.

20. (Original) The method of claim 14, wherein the molded material comprises a synthetic lumber, roofing tiles, molded trim profiles, or siding.

21. (Currently Amended) A forming apparatus for forming a moldable material, said apparatus comprising:

a first upper belt;

a second lower belt opposed to said first upper belt, said first and second upper and lower belts spaced apart a first distance, each of said first and second upper and lower belts comprising an inner surface and an outer surface, and wherein said outer surface of said first and second upper and lower belts are supported by first rigid supporting surfaces;

a third belt;

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a fourth belt opposed to said third belt, said third and fourth belts spaced apart a second distance and disposed substantially orthogonal to said first and second belts, each of said third and fourth belts comprising an inner surface and an outer surface;

a mold cavity defined by said inner surfaces of said first, second, third, and fourth belts; and

a belt drive mechanism operationally coupled to at least two of said first, second, third, and fourth belts.

22. (Currently Amended) A forming apparatus in accordance with Claim 21, further comprising first and second opposing contoured mold belts positioned at least partly in said mold cavity, each of said first and second mold belts comprising:

an inner surface comprising at least one of a profile, surface features, and texture that is molded into a moldable material; and

an outer surface in contact with said inner surface of said first or second ~~flat~~ belt.

23. Canceled.

24. (Currently Amended) A forming apparatus in accordance with Claim ~~21~~ 23 wherein each said first supporting surface comprises a friction reducing substance.

25. (Currently Amended) A forming apparatus in accordance with Claim 24 wherein said friction reducing substance comprises at least one of a fluoropolymer, and an ultra-high molecular weight polyethylene, ~~and other low friction polymers.~~

26. (Currently Amended) A forming apparatus in accordance with Claim ~~23~~ 21 wherein ~~each said first rigid support surface comprises~~ supporting surfaces comprise a plurality of air passage openings in fluid communication with a pressurized air source to provide a pressurized air film between said outer surface of said first and second belts and said first ~~second~~ rigid supporting support surfaces.

27. (Original) A forming apparatus in accordance with Claim 21 wherein at least one of said first, second, third, and fourth belts is adjustable so that at least one of said first distance and said second distance is variable.

28. (Original) A forming apparatus in accordance with Claim 22 wherein each said mold belt comprises an elastomeric face layer for contacting the moldable material, and a reinforced backing layer for contacting said inner surface of said first or said second belt.

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29. (Original) A forming apparatus in accordance with Claim 21 wherein said outer surface of said third and fourth belts is supported by second rigid supporting surfaces.

30. (Currently Amended) A forming apparatus in accordance with Claim 29 wherein each said second supporting surface comprises a friction reducing substance comprising at least one of a fluoropolymer, and an ultra-high molecular weight polyethylene, and other low friction polymers.

31. (Currently Amended) A forming apparatus in accordance with Claim 29 wherein each said second rigid ~~supporting surfaces comprise support surface~~ comprises a plurality of air passage openings in fluid communication with a pressurized air source to provide a pressurized air film between said outer surface of said third and fourth belts and said second rigid supporting support surfaces.

32. (Currently Amended) A continuous forming apparatus for forming a moldable material, said apparatus comprising:

a first pair of opposed upper and lower closed loop conveyors spaced apart a first distance, and each supported by a first rigid supporting surface;

a second pair of opposed closed loop conveyors spaced apart a second distance and disposed substantially orthogonal to said first pair of conveyors, and each supported by a second rigid supporting surface; and

a mold cavity defined by an area between said first and second pairs of conveyors; and

a drive mechanism for imparting motion to at least one of the first or second pair of closed loop conveyers.

33. (Original) A continuous forming apparatus in accordance with Claim 32 further comprising a pair of opposed mold members positioned at least partially in said mold cavity, each said mold member comprising a mold profile.

34. Canceled.

35. (Currently Amended) A continuous forming apparatus in accordance with Claim ~~32~~ 34 wherein at least one of said first rigid supporting surfaces and said second rigid supporting surfaces comprises a friction reducing substance.

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36. (Currently Amended) A continuous forming apparatus in accordance with Claim 35 wherein said friction reducing substance comprises at least one of a fluoropolymer, and an ultra-high molecular weight polyethylene, ~~and other low friction polymers.~~

37. (Currently Amended) A continuous forming apparatus in accordance with Claim ~~32~~ 34 wherein at least one ~~ea-~~ of said first rigid supporting surfaces and said second supporting surfaces comprises a plurality of air passage openings in fluid communication with a pressurized air source to provide a pressurized air film between said first and said second pairs of conveyors and said first and said second rigid support surfaces.

38. (Currently Amended) A continuous forming apparatus in accordance with Claim 33 wherein at least one ~~ea-~~ of said first pair of conveyors and said second pair of conveyors are adjusted so that at least one of said first distance and said second distance is variable.

39. (Currently Amended) A continuous forming apparatus in accordance with Claim ~~33~~ 32 wherein each said mold member comprises an elastomeric face layer for contacting the moldable material.